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Original article

A new sauropod dinosaur from the Lower Cretaceous Ilek Formation, Western Siberia, Russia☆

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ABSTRACT

Sibirotitan astrosacralis nov. gen., nov. sp., is described based on isolated but possibly associated cervical and dorsal vertebrae, sacrum, and previously published pedal elements from the Lower Cretaceous (Barremian?) Ilek Formation at Shestakovo 1 locality (Kemerovo Province, Western Siberia, Russia). Some isolated sauropod teeth from the Shestakovo 1 locality are referred to the same taxon. The phylogenetic parsimony analyses place *Sibirotitan astrosacralis* nov. gen., nov. sp., as a non-titanosaurian somphospondyl titanosauriform. The new taxon exhibits four titanosauriform and one somphospondylan synapomorphies, and one autapomorphy – a hyposphene ridge that extends between the neural canal and the postzygapophyses. It differs from all other Somphospondyli by having only five sacral vertebrae. The new taxon shares with *Euhelopus* and *Epachtosaurus* sacral ribs that converge towards the middle of the sacrum in dorsal view. *Sibirotitan astrosacralis* nov. gen., nov. sp., is only the second sauropod taxon from Russia and one of the oldest titanosauriform described so far in Asia.

1. Introduction

The outcrop of the Lower Cretaceous Ilek Fm. along the right bank of the Kiya River at Shestakovo village (Kemerovo Province, West Siberia, Russia), corresponding to the Shestakovo 1 vertebrate locality in the current nomenclature, first produced vertebrate remains in 1953 when two skeletal fragments of *Psittacosaurus* were found by geologists A.A. Mossakovsky and I.V. Lebedev (Rozhdestvensky, 1955, 1960). In the early 1960s, the remains of a distinctly larger dinosaur were found at Shestakovo 1, but the fate of this material is unknown (Bulynnikova and Trushkova, 1967). The recent exploration of the Shestakovo 1 locality started in 1994-1995, when E.N. Maschenko found there a tritylodontid tooth, a sauropod phalanx, and a mammal jaw, the latter representing the first Mesozoic mammal discovered in Russia (Maschenko and Lopatin, 1998; Tatarinov and Maschenko, 1999; Averianov et al., 2002). Nowadays, the Shestakovo 1 and nearby Shestakovo 3 localities produce a rich vertebrate fauna including fishes, salamanders, turtles, lizards, choristoderes, crocodylomorphs, pterosaurs, non-avian dinosaurs, birds, tritylodontids, and various mammals (Maschenko and Lopatin, 1998; Alifanov et al., 1999; Tatarinov and Maschenko, 1999; Efimov and Leshchinskiy, 2000; Averianov and Fayngertz, 2001; Averianov and Voronkevich, 2002; Averianov et al., 2002, 2003a, 2003b, 2006; Maschenko et al., 2003; Lopatin et al., 2005, 2009, 2010a, 2010b, 2015; Averianov and Lopatin, 2008; Kurochkin et al., 2011; O'Connor et al., 2014; Skutschas, 2014; Skutschas and Vitenko, 2015).

Alifanov et al. (1999) identified Titanosauridae indet. based on a peg-like tooth with a circular cross-section from the Shestakovo locality. Leshchinskiy et al. (2000: fig. 2) figured an unprepared, poorly preserved vertebra and reported on a juvenile spoon-like tooth from Shestakovo 1. Averianov et al. (2002) described a

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